

**I CLAIM:**

1. A combination water filter and suction device comprising:
  - a housing having a mounting surface for providing a flush mount to an inside of a tub, below a fill line of the tub;
  - said housing having an input orifice and an output orifice, and a shape to enable complete drainage;
  - said input orifice having a vertically oriented porous faceplate; and
  - a removable filter mounted inside the housing, thereby providing a suction device to intake all the water in the tub from underwater, not on a surface of the water, and to continuously filter said water with a replaceable filter.
2. The apparatus of claim 1, wherein the mounting surface further comprises a peripheral flange having a drainage slot.
3. The apparatus of claim 2, wherein the input orifice further comprises a rectangular shape, and the housing further comprises a radiused semi-cylindrical shape to provide insertability into a rectangular opening in a tub and complete drainage of water in the housing.

1        4. The apparatus of claim 1, wherein the vertically  
2        oriented porous faceplate further comprises a plurality of  
3        holes at least about 25 holes per square inch, each hole  
4        about .25 inches O.D.

5        5. The apparatus of claim 1, wherein the vertically  
6        oriented porous faceplate further comprises a plurality of  
7        holes per square inch and each hole having a diameter,  
8        wherein hair cannot become entrapped in the holes with the  
9        use of a pump that allows about 50 gallons per minute flow  
10       and about 1 - 1 ½ inch piping system.

11       6. The apparatus of claim 5, wherein the vertically  
12       oriented porous faceplate further comprises a convex outer  
13       surface to prevent body part entrapment.

14       7. The apparatus of claim 1, wherein the removable  
15       filter further comprises an internal core, said core having  
16       a plurality of holes with ascending size away from the  
17       output orifice to allow an efficient use of a surrounding  
18       filter, said surrounding filter holding less than seven  
19       ounces of water after drainage.

20       8. The apparatus of claim 7, wherein the internal core  
21       supports a secondary filter inside it.

22       9. The apparatus of claim 5, wherein the housing further  
23       comprises a brace to reinforce the vertically oriented  
24       porous faceplate.

1        10. In combination with a whirlpool bath, said whirlpool  
2 bath having a tub, the tub having an inside surface, a  
3 closed loop piping system, a water pump, output jets and a  
4 suction device, the improvement comprising:

5            a housing having a flange for a flush mount on the  
6            inside surface;  
7            the housing having an input orifice comprising an  
8            open wall contiguous with the inside surface,  
9            and an output orifice;  
10           the input orifice having a porous faceplate; and  
11           a removable filter mounted inside the housing,  
12           thereby providing a single combination filter  
13           and suction device for the whirlpool bath.

14        11. The improvement of claim 10, wherein the housing  
15 further comprises a drainage slot.

16        12. The improvement of claim 10, wherein the housing  
17 further comprises a sloped rear panel to provide complete  
18 drainage.

19        13. The improvement of claim 10, wherein the porous  
20 faceplate further comprises an anti-hair entrapment design.

21        14. The improvement of claim 13, wherein the porous  
22 faceplate further comprises a convex outer surface to  
23 prevent body entrapment.

24        15. The improvement of claim 10, wherein the removable  
25 filter further comprises an internal core having holes with

1 an ascending size pattern away from the output orifice to  
2 provide an efficient use of a surrounding filter.

3 16. The improvement of claim 15, wherein the internal  
4 core further comprises a secondary filter inside it.

5 17. The improvement of claim 10, wherein the housing  
6 further comprises a support bracket to reinforce the porous  
7 faceplate.

8 18. The improvement of claim 12, wherein the removable  
9 filter further comprises a water retention of less than  
10 seven ounces after draining.

11 19. A combination water filter and suction device for a  
12 whirlpool bath, the device comprising:

13 housing means functioning to support a removable

14 filter means and provide an inlet opening

15 contiguous with an inner surface of the

16 whirlpool bath; and

17 faceplate means functioning to cover the inlet

18 opening and prevent body entrapment, hair

19 entrapment, and prevent accidental breakage

20 thereof.

21 20. The apparatus of claim 19, wherein the removable  
22 filter retains less than seven ounces of water after  
23 drainage.

24 21. A combination water filter and suction device for a  
25 tub recirculation system, said suction/filter comprising:

a housing having a mounting surface for providing a flush mount to an inside of a tub, below a fill line of the tub;

said housing having an input orifice contiguous with the inside of the tub;

said housing having an outlet port located behind the mounting surface;

said input orifice having a vertically oriented ventilated faceplate; and

a removable filter mounted inside the housing having a connection to the outlet port, thereby providing a suction device to intake all the water in the tub from the underwater and to continuously filter said water with a replaceable filter.

22. The apparatus of claim 21, wherein the input orifice further comprises a rectangular shape, and the housing further comprises a radiused semi-cylindrical shape with a forward sloping bottom to provide insertability into a rectangular opening in a tub wall and a complete drainage of water from the housing when the tub is empty.

23. The apparatus of claim 22, wherein the faceplate further comprises a plurality of holes including drainage holes along a bottom peripheral edge.

1           24. The apparatus of claim 21, wherein the faceplate  
2 further comprises a plurality of flow through holes  
3 including drainage holes along a bottom edge thereof.

4           25. The apparatus of claim 24, wherein the faceplate  
5 further comprises a peripheral ledge sized for an overlapped  
6 fit around the mounting surface of the housing, and a  
7 mounting magnet.

8           26. The apparatus of claim 21, wherein the faceplate  
9 further comprises a plurality of structural fins on a back  
10 side thereof, said fins sized to fit into a set of receiving  
11 slots in the housing, thereby providing a resistance to  
12 breakage of the faceplate.

13           27. The apparatus of claim 26, wherein the faceplate  
14 further comprises a peripheral ledge to overlap the mounting  
15 surface of the housing.

16           28. The apparatus of claim 27, wherein the faceplate  
17 further comprises a mounting magnet having a location  
18 opposite a housing receiver, thereby providing a pop off  
19 mount for the faceplate.

20           29. The apparatus of claim 28, wherein the housing  
21 receiver further comprises a magnet.

22           30. The apparatus of claim 21, wherein the removable  
23 filter further comprises an internal core, said core having  
24 a plurality of holes with ascending size away from the

1 output orifice to provide for an efficient flow of water  
2 through a surrounding filter.

3 31. The apparatus of claim 30, wherein the internal  
4 core further comprises a retainer for a treatment apparatus.

5 32. The apparatus or claim 31, wherein the treatment  
6 apparatus further comprises a chemical tablet.

7 33. The apparatus of claim 21 wherein the housing  
8 comprises a pop off connection for the removable filter from  
9 the connection to the outlet port.

10 34. The apparatus of claim 33, wherein the pop off  
11 connection further comprises an inward cant to an outlet  
12 sidewall of the housing, said outlet sidewall containing the  
13 outlet port.

14 35. The apparatus of claim 34, wherein the removable  
15 filter further comprises a collar mountable in the outlet  
16 port.

17 36. The apparatus of claim 35, wherein the outlet port  
18 further comprises a safety/sanitation port having a  
19 connection to ambient air, said connection ending at a  
20 location above a water line of the tub, wherein the  
21 operation of the recirculation system without the removable  
22 filter allows the ambient air into the recirculation system,  
23 thereby causing a cavitation.

1        37. The apparatus of claim 21, wherein the faceplate  
2 further comprises a radiating slot pattern from a central  
3 point of the faceplate.

4        38. In combination with a whirlpool bathtub system,  
5 said whirlpool bathtub system having a closed loop piping  
6 system, a water pump, output jets and a suction device, said  
7 bathtub having an inner wall and a bottom, the improvement  
8 comprising:

9        a housing having a mount for the inner wall;  
10       the housing having an input orifice contiguous with  
11       the inner wall and having an output port;  
12       the input orifice having a flow through faceplate; and  
13       a removable filter mounted inside the housing, thereby  
14       providing a single combination filter and  
15       suction device for the whirlpool bathtub system.

16       39. The improvement of claim 38, wherein the housing  
17 further comprises a sloped bottom to provide complete  
18 drainage when the whirlpool bathtub system is drained.

19       40. The improvement of claim 38, wherein the porous  
20 faceplate further comprises a pop off attachment to the  
21 housing.

22       41. The improvement of claim 40, wherein the pop off  
23 attachment further comprises a magnet holding the faceplate  
24 to the housing.



1        42. The improvement of claim 40, wherein the pop off  
2 attachment further comprises a ledge around a periphery of  
3 the faceplate.

4        43. The improvement of claim 42, wherein the pop off  
5 attachment further comprises a magnet holding the faceplate  
6 to the housing.

7        44. The improvement of claim 40, wherein the removable  
8 filter has a pop off attachment to the housing.

9        45. The improvement of claim 44, wherein the pop off  
10 attachment further comprises a canted outlet wall on the  
11 housing, said canted outlet wall containing the output port.

12       46. The improvement of claim 45, wherein the removable  
13 filter further comprises a mounting collar having an  
14 alignment groove to receive an alignment ridge inside the  
15 outlet port, and having a safety/sanitation port on the  
16 outlet port to create a cavitation in the whirlpool bathtub  
17 system when the removable filter is not properly mounted  
18 inside the outlet port.

19       47. A combination water filter and suction device for a  
20 whirlpool bath, the device comprising:

21       housing means functioning to support a removable  
22       filter means and provide an inlet opening  
23       contiguous with an inner surface of the  
24       whirlpool bath; and

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1 faceplate means functioning to cover the inlet  
2 opening and prevent body entrapment, prevent  
3 hair entrapment, and prevent accidental breakage  
4 thereof.

5 48. The apparatus of claim 47, wherein the faceplate  
6 means further comprises a pop off design means functioning  
7 to enable a user with hair entangles in the faceplate means  
8 to easily pulloff the faceplate means to prevent drowning.

9 49. The apparatus of claim 47, wherein the removable  
10 filter means further comprises a pop off design means  
11 functioning to enable a user with hair entangled on the  
12 removable filter means to easily pull off the removable  
13 filter means.

14 50. The apparatus of claim 47, wherein the housing  
15 further comprises an outlet port having a safety/sanitation  
16 port means functioning to create cavitation if the whirlpool  
17 bath is operated without the removable filter means.

18 51. The apparatus of claim 47, wherein the removable  
19 filter means further comprises an anti-microbial surface.

20 52. The apparatus of claim 47, wherein the outlet port  
21 has an ID of about 2" and a flow rate of about 200 GPM.

22 53. In combination with a whirlpool bathtub system,  
23 said whirlpool bathtub system having a closed loop piping  
24 system, a water pump, output jets and a suction device, said

1 bathtub having an inner wall and a bottom, the improvement  
2 comprising:  
3 a housing integral with the inner wall;  
4 the housing having an input orifice contiguous with the  
5 inner wall and having an output port;  
6 the input orifice having a flow through faceplate; and  
7 a removable filter mounted inside the housing, a  
8 housing integral with the inner wall, and  
9 suction device for the whirlpool bathtub system.

10 54. The improvement of claim 53, wherein the housing  
11 further comprises a sloped bottom to provide complete  
12 drainage when the whirlpool bathtub system is drained.

13 55. The improvement of claim 53, wherein the porous  
14 faceplate further comprises a pop off attachment to the  
15 housing.

16 56. The improvement of claim 55, wherein the pop off  
17 attachment further comprises a magnet holding the faceplate  
18 to the housing.

19 57. The improvement of claim 53, wherein the pop off  
20 attachment further comprises a ledge around a periphery of  
21 the faceplate.

22 58. The improvement of claim 57, wherein the pop off  
23 attachment further comprises a magnet holding the faceplate  
24 to the housing.

1           59. The improvement of claim 53, wherein the removable  
2 filter has a pop off attachment to the housing.

3           60. The improvement of claim 59, wherein the removable  
4 filter pop off attachment further comprises a canted outlet  
5 wall on the housing, said canted outlet wall containing the  
6 output port.

7           61. The improvement of claim 53, wherein the removable  
8 filter further comprises a mounting collar having an  
9 alignment groove to receive an alignment ridge inside the  
10 outlet port, and having a safety/sanitation port on the  
11 outlet port to create a cavitation in the whirlpool bathtub  
12 system when the removable filter is not properly mounted  
13 inside the outlet port.

14           62. A suction/filter for a suction drain in a jetted  
15 spa or tub intended to reduce the risk that an occupant's  
16 hair could become entangled within a water stream entering  
17 the drain, comprising:

18           a base mountable to an interior surface of the tub or  
19           spa, the base having a central opening which  
20           communicates with the suction drain, said base  
21           extending generally parallel to the underlying  
22           spa surface and having a peripheral edge;

23           a cover having a face wall spaced from the base and a  
24           sidewall extending from the face wall and having  
25           a free peripheral edge contacting said base in

1           the region of its periphery to define a closed  
2           chamber enclosing said opening, said face wall  
3           and sidewall being perforated to act as a screen  
4           in the way of entry of hair into the chamber.  
5       an interior wall mounted within said chamber and  
6           shaped to act as a flow directing vane with  
7           respect to water entering the chamber and  
8           passing through the opening to the suction drain  
9           to resist the development of a water vortex  
10          within said chamber, wherein the perforated  
11          character of said walls and the water flow  
12          across said interior wall within said chamber  
13          resist entrapment of the occupant's hair within  
14          the water stream entering the suction drain.  
15       a second interior wall forming another vane extending  
16          from the face wall of said cover toward said  
17          base, wherein said second interior wall  
18          intersecting with said first interior wall to  
19          divide said cover into four portions, the total  
20          area of the holes in each portion of said cover  
21          equaling the total area of the holes in each  
22          other portion of said cover; and  
23       wherein said cover further comprises a slot which  
24          receives a disposable filter.

1           63. A suction/filter assembly for reducing the  
2    turbulence of water passing through the suction/filter  
3    assembly into a suction drain, the suction/filter assembly  
4    comprising:  
5           a base having a central opening in communication with  
6           the suction drain.  
7           a cover including a face wall spaced from the base  
8           and including a sidewall extending from the face  
9           wall, the base configured to mate with the  
10          sidewall to form a chamber between the cover and  
11          the base, wherein at least the face wall or the  
12          sidewall having holes therethrough to allow  
13          passage of water through the safety cover.  
14          at least one interior wall dividing the chamber into  
15          a plurality of subchambers, each subchamber  
16          allowing passage of water through the safety  
17          cover assembly into the suction drain, whereing  
18          the at least one interior wall includes a first  
19          guide vane integrally formed on the base and  
20          projecting towards the face wall, wherein the  
21          second guide vane is configured to align with  
22          and about the first guide vane; and  
23          wherein said cover further comprises a slot which  
24          receives a disposable filter.